

NEW SPECIES OF NEW YORK STATE CERATOPOGONIDÆ

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In a study of the biology of some Ceratopogonidæ a number of species were encountered which appear to be new. These, together with the males of some others, of which only females have thus far been discovered, are therefore herewith described.

KEY TO SPECIES OF DASYHELEA OF NORTHEASTERN UNITED STATES

Females

1. Posterior margin of abdominal segments light yellow.....2
 Posterior margin of abdominal segments not light yellow.....3
2. Halteres yellow; mesonotum gray pruinose; scutellum yellow.....*grisea* Coq.
 Halteres light brown to black; mesonotum, metanotum, and mesosternum
 blue pruinose; scutellum yellow with a black central patch; last
 antennal segment with stylet.....*subcærulea* n. sp.
3. Halteres yellow.....4
 Halteres black.....5
4. Last antennal segment with no stylet; spermatheca spherical with pos-
 terior extension curved and sclerotized (Fig. 26).....*mutabilis* Coq.
 Last antennal segment with stylet; spermatheca nearly pyriform, pos-
 terior extension about a third its length (Fig. 23).....*oppressa* n. sp.
 Small species, 1.5 mm. in length; mesonotum without vitta; apices of
 knobs black; last antennal segment with stylet.....*traveræ* n. sp.
 Larger species, 2 mm. in length; mesonotum with four brownish vittæ;
 apices of knobs white.....*major* Malloch

Males

1. Ninth sternite with a central posterior extension (Fig. 1).....2
 Ninth sternite without a central posterior extension (Fig. 3).....3
2. Central posterior extension narrow, highly sclerotized; distal portion of
 harpes cleaver-shaped; no processes at base of cerci (Fig. 1).....
 *mutabilis* Coq.
 Central posterior extension broad; distal portion of harpes needle-like
 (Fig. 6).....N. sp. ?
3. A sclerotized process at base of cerci.....4
 No process at base of cerci; distal portion of harpes broadening just
 above aedeagus and tapering toward apex; lateral part of aedeagus
 double (Fig. 3).....*traveræ* n. sp.
4. Ninth sternite with a distinct central posterior depression; distal portion
 of harpes broad; basal process of cerci nearly as long as cerci
 (Fig. 2).....*oppressa* n. sp.

No depression in ninth sternite; distal portion of harpes narrow, apex pointed; basal process of cerci scarcely half as long as cerci (Fig. 5).....*subcærulea* n. sp.

***Dasyhelea subcærulea* new species**

Female. Length 1.5 mm. Wing length 1 mm. Head black, dark blue pruinose; eyes contiguous; proboscis brown, palpi light brown; antennæ black with short black hairs, last segment tapering into a style; basal segment oval, others slightly increasing in length to fourteenth segment, fourteenth segment nearly twice as long as wide. Thorax black, mesonotum, mesosternum, and metonotum blue pruinose, in some specimens a central black vitta distinct on mesonotum; scutellum yellow with black central patch and eight marginal bristles. Halteres light brown to black. Legs light yellow to brown with apices of segments black; hind tarsal proportions are 23-9-6-4-5; claws simple. Wings hairy, bare spaces on both sides of veins; radial branches fused except small space where they join the costa, producing a very narrow second radial cell a third the length of the fused portion; cubitus forking opposite to center of fused radial veins; base of media indistinct. Abdomen velvety black with posterior margins of each segment light yellow, segments seven and eight have the light yellow a third the width of the segment; spermatheca oval, posterior extension about a third its length, curved and sclerotized.

Male. Similar to female in coloring except the light yellow margins of the abdominal segments are not always as well defined as in females. Antennæ black, the plume reaching to last segment; segments 2-9 are 0.8 as long as 10-14 combined; segments 10-14 are in proportions of 7-16-16-12-20 (Fig. 34). Wing less hairy than female; cubitus forking opposite to where anterior branch of radius joins costa, second radial cell more distinct than in female and a fourth the length of the fused portion.

Terminalia: Tergite rounded at its posterior extremity, covered with short hairs; cerci highly sclerotized with a short bristle at apex, at the base of each cercus is a highly sclerotized process half its length; sternite broad with a small posterior medial depression and covered with short hairs; side pieces short and thick covered with hairs and a few bristles; claspers slightly longer than side pieces and densely covered with hairs; harpes asymmetrical, the basal portions are slender curved rods extending from side pieces to center of ninth segment, the distal portion is a long rod curved at the apex and as long as the ninth tergite, which arises from the left side of insect at anterior end of basal portion; the basal portion of the aedeagus broad, extending laterally to the side pieces, two medial distal portions curved at apex and about half the length of side pieces (Fig. 5).

Holotype and allotype in the Cornell University collection. Ithaca, N. Y.

***Dasyhelea oppressa* new species**

Female. Length 1.2 mm. Head black; eyes broadly contiguous dorsally; proboscis and palpi brown; antennae black, hairs black, lighter at tips; last segment bears a style; basal segments oval, increasing in length to thirteenth segment, which is a third longer than broad; fourteenth segment twice as long as thirteenth. Thorax black; mesonotum with bluish pruinescence making an indefinite pattern, anterior lateral angles yellow; yellow spot at base of wings; a narrow longitudinal yellow streak on the lateral edge of the precutellar depression, a medium double row of hairs on the mesonotum, with scattered hairs on the sides; six long bristles near the posterior margin of mesonotum; scutellum yellowish brown the medium area darker, with a row of six marginal bristles and three to six short medium hairs; metanotum black with bluish pruinescence. Stem of halteres black, knob white. Legs yellowish brown, apices of femora and tibia black, apices of tarsi slightly darker, claws simple; hind tarsal proportions, 21: 8: 6: 4: 5. Wings 1 mm. in length. Surface thickly covered with hairs, somewhat denser at anterior margin; radial branches fused except a small space where they join the costa, producing a second radial cell a third the length of the fused portion; cubitus forking just beyond the crossvein. Abdomen dull black, eighth and ninth segments lighter. Spermatheca nearly pyriform, posterior extension about a third its length (Fig. 23).

Male. Similar to female in coloring. Antennal segments 2-9 a sixth shorter than 10-14 combined; eleventh to fourteenth are in the proportions of 8: 6: 7: 8. Wing less hairy, cubitus forking opposite to where anterior branch of radius joins costa, second radial cell not as distinct as in female. Abdomen velvety black with black hairs.

Terminalia. Tergite of ninth segment reaching to end of side pieces, dorsally sparsely long haired; cerci highly sclerotized ending with a long hair; at base of each cercus with a process covered with hairs and nearly as long as cerci. Sternite with posterior medial depression; side pieces of forceps with many long hairs denser towards the tergite; claspers covered with short hairs except inner side of distal third where there are two to three long hairs; harpes asymmetrical, the distal portion a broad rod, arising from the basal part which is on the left side of the insect; the basal portion of aedeagus broad, extending laterally to the side pieces, two medial distal portions hooked at apex and about half the length of side pieces (Fig. 2).

Holotype and allotype in the Cornell University collection. Reared from larvæ taken from the wound of an elm tree on Cornell campus. Ithaca, N. Y., July to September, 1934.

***Dasyhelea traveræ* new species**

Female. Length 1.5 mm. Head black. Eyes contiguous dorsally; proboscis and palpi black; antennae black with black hairs, last segment tapering into a style; basal segments oval, slightly increasing in length

to fourteenth segment; fourteenth segment nearly twice as long as wide. Thorax black; mesonotum with bluish gray pruinescence, anterior lateral angles brown, a brown spot at base of wings; scutellum with eight marginal bristles. Halteres black. Legs black except tarsi which are yellowish brown with black apices; claws simple; hind tarsal proportions are 24: 4: 6: 4: 5. Wings 1.2 mm. in length; hairy; bare lines along the veins, hairs denser along anterior margin. Radial branches fused except small space where they join the costa, producing a very narrow second radial cell a third the length to the posterior end of second radial cell; base of media indistinct. Abdomen velvety black; spermatheca ovoid covered with irregular projections; duct membranous (Fig. 21).

Male. Similar to female in coloring. Hair of antennae black with light tips; segments 2-10 transversely oval, about an eighth longer than 10-14 combined; eleventh to fourteenth are in the proportions of 7: 5: 5: 7. Wing length 1.4 mm., less hairy than female; cubitus forking opposite to where anterior branch of radius joins costa, second radial cell more distinct than in female.

Terminalia. Ninth tergite rounded at its posterior extremity, covered with short hairs and a scattering of long stout hairs. Cerci prominent, highly sclerotized having a long bristle at apex and covered with short hairs. Sternite broad, covered with short hairs; side pieces slightly longer than claspers covered with hairs and a few bristles. Claspers with pointed tips each bearing a stout spine near apex; the basal two-thirds with stout hairs. Harpes highly sclerotized, basal portion nearly symmetrical, broad near medium line and curving laterally, the distal portion reaching nearly to cerci, broadening beyond aedeagus and tapering toward apex. Aedeagus with two lateral projections as figured, the outer projections reaching to middle of side pieces (Fig. 3).

Holotype and allotype in the Cornell University collection. Reared from larvæ taken from floating algæ in ponds in May and September. Ithaca, New York.

Forcipomyia johannseni new species

Female. Length 1 mm. Wing length 0.6, width 0.3. Head black, proboscis and palpi brown; eyes contiguous; antenna dark brown with short black hairs, segments 2-9 are 1.3 times as long as segments 10-14 combined, last segment twice as long as 13th, with stylet. Thorax dark brown, mesonotum, scutellum, and metanotum glossy, black; mesonotum covered with black hairs, those in presutellar depression twice as long as others; five long hairs along margin of scutellum. Stem of halteres light brown, knob white. Legs light brown, tarsi paler; hind tarsal proportions are 15: 7: 6: 5: 5, claws as long as last tarsal segment with a very short spur at base, empodium as long as claws. Wings densely covered with macrotrichia; posterior branch of radius ends in the middle of wing as measured from the arculus to the tip; first radial cell almost obliterated, second radial cell

slightly longer than first and nearly half as wide as long; posterior branch of media very faint; cubitus forking in line with the end of first radial cell. Abdomen brown covered with black hairs; one spermatheca, oval and highly sclerotized, duct membranous.

Male. Length 1.5 mm. Wing length 0.9 mm., width 0.3. In coloring as with the female but differs from female in having thorax, wings, and abdomen less hairy. The last five segments of antennæ as long as 2-9 combined, the last five bearing the ratio of 5:15:11:7:9; the fourteenth with stylet; antennal plume reaching to middle of last segment. Hind tarsal proportions are 25:11:10:6:4.

Terminalia: Ninth segment dark brown with a scattering of long hairs and dense covering of short hairs, posterior border of sternite depressed in the middle, tergite with a membranous posterior extension and a small process with a hair on each side; side pieces ovoid, covered with short hairs and scattered long ones, claspers about as long as side pieces, lightly sclerotized, basal third covered with short hairs, distal portion slightly spatulate; harpes long, narrow straight rods, arising at base of side pieces and crossing caudad of aedeagus, highly sclerotized, no basal connection between the two rods; aedeagus a broad membranous plate with highly sclerotized lateral processes and two slender rods extending anteriorly from posterior edge of mid portion of membranous plate (Fig. 15).

Holotype and allotype in Cornell University collection. Reared from larvæ taken from bark from wound of elm tree on Cornell campus, Ithaca, New York, July 17, 1934. This species will fall in with *F. specularis* in Malloch's key (Malloch, 1915). It differs in having an elongate hind basitarsus. From *F. fuscicornis* Coq. it differs in being smaller, in having the hind basitarsus shorter than the combined three following segments and in the glossy black scutellum.

***Alluaudomyia (Neoceratopogon) needhami* new species**

Female. Length 2 mm. Wing 1.7 mm. Eyes narrowly separated; vertex covered with dense white pruinescence; occiput and postgenæ black; clypeus and palpi dark brown; proboscis light brown; antennae as long as thorax; basal joints white gradually becoming light brown toward apex, antennal hairs brown. Mesonotum dark brown covered with grayish-brown pruinescence except the anterior portion and the lateral margins which are white; discal hairs black and those located in the grayish brown part have a black spot at the base of each hair (Fig. 18). Scutellum white, a black streak in the center; metanotum black, anterior lateral angles covered with white pruinescence; pleura dark brown except dorsal border which is white; sternum dark brown. Halteres white. Legs black, marked with white as follows: fore coxæ, narrow part at base of femora, a narrow band before apices of femora, a narrow band near base of fore and hind tibia, a broad band near base of mid tibia, a narrow band near apices of each

tibia; tarsi except hind metatarsi, and apices of all segments of tarsi. Wings white, densely covered with white hairs except basal portion; veins white. Ten black spots as follows: On crossvein, below and proximad of crossvein, at apex of posterior branch of radius, near base of posterior branch of media, near base of anterior branch of cubitus, near apices of anterior and posterior branches of media and cubitus, at apex of anal vein. Spots on apices of media and cubitus are long narrow lines on veins. First radial cell nearly obliterated by fusion of radial branches for one-half the length of the anterior branch of radius; posterior branch of radius ends six-tenths of entire wing as measured from arculus; cubitus forks in line with anterior end of second radial cell (Fig. 25). First and second tergite of abdomen, anterior portion of third and fourth, black, remaining segments white. Pleura white, sternum black.

Male. Length 1.5 mm. Wing 1.1 mm. Similar to female in coloring. Antennæ golden, last three segments dark brown, the plume dense and reaching to last segment; hairs at base light brown and white at tips; segments 2-9 eight-tenths as long as segments 10-14 combined; segments 10-14 are in the proportion of 5:10:13:15:15; last segment bears a style (Fig. 33). Mesonotal pattern not as definite as in the female. Wings clear, veins light colored, a few macrotrichia at distal anterior margin; spots on wing same as with the female except that those at apices or media and cubitus are reduced to a faint line on the veins; posterior branch of radius ends at slightly over half of wing-length as measured from arculus; cubitus forks in line with the basal end of the second radial cell.

Terminalia: Ninth segment as long as seventh and eighth combined; posterior portion of tergite a white membranous structure ending in two small cerci each with a long spine; sternite with anterior end sclerotized forming a central depression posteriorly. Side piece of forceps black, 3.5 times as long as lateral margin of ninth sternite, entirely covered with short hairs and with many bristles; claspers light brown, half as long as side pieces, bases with thick hairs. Harpes entirely separate, basal part highly sclerotized, attached to anterior basal part of side pieces, distal portion a long rod as long as side pieces, inner sides covered with short hairs, each rod bearing a slender curved rod longer than the claspers. Aedeagus a triangular structure with sides heavily sclerotized, the tip curving into a short point (Fig. 7).

Holotype and allotype in the Cornell University collection. Reared from eggs taken from floating pond algae. June, 1933. Ithaca, New York.

Alluaudomyia (Neoceratopogon) splendidus Winnertz
(*Ceratopogon bellus* Coq.)

Female. Differs from *needhami* in the number of spots on the wings and in the thoracic marking of which there are several

color variations. The macrotrichia on wings are more definitely arranged along the veins and not so dense.

Male. The terminalia exhibit the striking differences. Ninth segment three times as long as eighth segment; anterior margin of tergite black, posterior portion white ending in two sharp pointed cerci and two short processes on ventral surface covered with short hairs; anterior and lateral margins of sternite black and heavily sclerotized forming a deep central depression. Side pieces of forceps black, twice as long as lateral margin on ninth sternite, densely covered with hairs and scattered bristles; claspers not quite half as long as side pieces, bases covered with short hairs. Harpes entirely separate, basal portion attached to anterior basal portion of side pieces, distal part forming a rod half as long as side pieces with enlarged rounded tips. Aedeagus with two highly sclerotized internal arms, which extend posteriorly, each ending in a flap (Fig. 9).

***Stilobezzia bulla* new species**

Female. Length 1 mm. Wing 0.8 mm. Vertex of the head, proboscis, and palpi light gray; antennae almost white, long, reaching to the first abdominal segment. Thorax dark gray, covered with gray pruinescence; mesonotum with prominent brown mesonotal pits and few short hairs; scutellum yellowish with four marginal bristles; metanotum black. Halteres white with two short bristles on knob. Legs nearly white with apices of each of the segments light brown; fore leg as long as body, mid and hind legs half again as long; hind metatarsal segment with a double row of very closely set spines; hind tarsal segments are in the proportion of 30:12:6:5:7; claws unequal, one as long as last segment, the other one half as long. Wings clear, no macrotrichia, veins very light in color; second radial cell nearly twice as long as the fused first; stem of media twice as long as the cross vein; cubital fork nearly on line with medial fork. Abdomen black, with few stout hairs. Two spermatheca oval with duct sclerotized a very short distance.

Male. Similar to female in color. Antennæ light brown, last three segments dark brown and with a dark brown, thick plume; the last five antennal segments are in the proportion of 5:7:14:15:19. Claws of legs simple, equal and half as long as last segment.

Terminalia: Posterior portion of ninth tergite ends in well developed cerci and a central bilobed process, both structures thickly covered with bristles; sternite a very narrow sclerotized band and transparent membranous structure extending nearly to the aedeagus. Side pieces of forceps long and narrow, on the distal half, mesad, are heavily sclerotized knobs articulating with the aedeagus. Claspers half as long as side pieces, tips

rather blunt, both with a few short bristles and many short hairs. The pair of harpes are not fused; the basal portion of each is a narrow curved structure one end of which is attached to side pieces; the distal portion is a long slender needle-like structure. The aedeagus has a broad basal part with lateral arms attached to knobs on side pieces (Fig. 13).

Holotype and allotype are in the Cornell University collection. Reared from larvæ taken from algæ from McLean Bogs in June 1933. Ithaca, N. Y.

This species will fall in with *Hartomyia arctica* and *H. diversa* in Malloch's Key (Malloch 1915); differing from the first in wing venation, from the second in the color of the abdomen.

Plapomyia pruinescens new species

Female. Length 3.8 mm. Head brown; eyes well separated; vertex, occiput, and palpi covered with dense pruinescence; antennæ brown, two basal segments light brown, segments 2-9 half as long as 10-14 combined, each of the latter eight times as long as wide; tips of antennæ reaching to scutellum. Thorax entirely covered with gray pruinescence; mesonotum black with median longitudinal grayish vitta divided by a fine line, the vitta ending in a pair of elongate seal brown spots laterad of which are two similar but smaller spots (Fig. 19). Scutellum dark brown having six long marginal spines; mesonotum black. Stems of halteres light brown, knob black. Legs brownish yellow, the coxæ, trochanters, extreme tips of all tibia, the tips of middle and apical half of hind femora, the basal third of middle and the basal half of hind tibia, and the last two tarsal segments largely, on all feet, dark brown. Fore femora with 10-14, middle from 1-4, hind femora with 2-4 short black spines on lower side near apex; fourth segment cordiform; underside of fifth tarsal segments with a few bristly hairs, no spines; hind tarsal segments are in the proportions of 13: 5: 2: 2: 5; claws subequal, toothed near base.

Wings 3.5 mm. in length. Clear, veins light brown; costa extending four-fifths of wing length as measured from arculus; second radial cell twice as long as first; posterior branch of radius as long as media from arculus to cross vein; media forking at cross vein; cubitus forking beyond cross vein. Abdomen light brown; two spermatheca, oval with small part of duct sclerotized. Segments six and seven have each a pair of eversible glands on anterior margins of tergite; segments five, six, and seven have each a pair of gland rods (Fig. 27).

Male. Length 2.4 mm. Wing 2.2 mm. Differs from female in the following points: Antennæ black, segments 10-14 in proportion of 8: 12: 9: 8: 18. Vitta on thorax very faint in most cases. Hind femora, mid and hind tibia, entirely dark brown; eight spines on fore, one on mid, and none on hind femora.

Terminalia. Tergite of ninth segment has a row of ten long bristles near median transverse line, the posterior part ends in two well developed cerci and one ventral lobe covered with short hairs (Fig. 11). The sternite has

a few short bristles at lateral posterior part and a large central depression. Sides pieces of forceps have on the margin near the ædeagus a short projection ending in a short bristle, the claspers slightly longer than side pieces, blunt, both side pieces and clasper having a few stout bristles and covered with short hairs. Harpes heavily sclerotized, fused into a single structure, the basal part extending to side pieces and the distal part forming an elongated rod rounded at tip (Fig. 4). The ædeagus forms a flat triangular structure with the margins highly sclerotized with a small cap-like structure on tip (Fig. 11).

Holotype and allotype in Cornell University collection. Reared from larvæ taken from blanket algæ, June–September, Ithaca, New York. 1934.

This species will find a place in Malloch's Key (1915) near *P. illinoensis*, differing in the thoracic markings.

Palpomyia tibialis Meigen

Male. Length 2.5 mm., wing 2.2. Similar to female in coloring. Antennal segments 10–14 are in the proportion of 4: 6: 13: 17: 19.

Terminalia. Ninth segment black; basal part of tergite sclerotized; posterior part ends in two well developed cerci with sclerotized margins, and one ventral lobe. The sternite has a large central depression, a transparent membrane with short hairs is between the depression and the ædeagus. Side pieces of forceps extend nearly to cerci each with a large rounded projection at the base, the claspers are half the length of side pieces and narrow towards the apex into a point. Harpes heavily sclerotized, basal part extending to side pieces and the distal part forming a short rod ending in two comma-like structures (Fig. 16). Aedeagus heavily sclerotized, triangular in shape with two lateral arms extending anteriorly to base of side pieces and posteriorly forming a cordiform knob (Fig. 16).

Male and female reared from larvæ taken from mud from edge of ponds from May to September, 1933. Ithaca, New York.

Bezzia varicolor Coquillett

Male. Length 2 mm. Wing 1.6 mm. Head black covered with gray pruinescence; proboscis and palpi dark brown; antennæ dark brown, pedicel nearly black, bases of all segments lighter, plume light brown; segments 2–9 are 0.6 as long as 10–14 com-

bined; segments 10–14 are in the proportion of 10 : 13 : 22 : 37 : 32. Thorax including scutellum brown; metanotum darker; mesonotum with three dark brown vittæ, the laterals abbreviated anteriorly; the humeri, space between vittæ, and anterior part of pleura gray pruinose; in some lights with a brown spot on humeri. A few short black hairs above the base of the wing and one on postero-lateral angle; scutellum with about six short setæ. Halteres yellowish. Legs as described by Coquillett for the female but with colors less contrasting especially in mature specimens. Fourth segment cordate; hind tarsal segments are in the proportion of 38 : 22 : 12 : 8 : 16. Claws simple and half as long as last segment. Wings clear, veins pale; posterior branch of radius ends at eight tenths the wing length as measured from the arculus, and twice as long as anterior branch; media forking just in front of the cross vein. Abdomen dark brown.

Terminalia. Posterior part of ninth tergite is membranous ending with short cerci which are covered with hairs and numerous stout bristles; the sternite has a posterior medial depression which is a thin membranous structure covered with short hairs. Side pieces of forceps and claspers equal in length and both covered with hairs and numerous bristles. Harpes highly sclerotized, the basal portion not fused, the lateral arms extending to side pieces, distal portion merged into a long rod, rounded at tip and reaching to cerci. Aedeagus a triangular structure with the lateral sides heavily sclerotized, the base and tip are covered with short hairs (Fig. 12).

Reared from larvæ taken from floating algæ every month of the year. Ithaca, New York.

This sex will find a place in Malloch's key with *pruinosa* because of its dark abdomen, but it differs in leg markings. In mature female specimens the abdomen is brownish rather than yellow.

***Probezzia copiosa* new species**

Female. Length 2 mm. Wing 1.8 mm. Vertex of head, fronto-clypeus, black with gray pruinescence; proboscis dark brown; palpi light brown; eyes widely separated; antennæ brown, last five segments darker, short, reaching to anterior third of mesonotum.

Thorax black covered with gray pruinescence and short hairs. Anterior lateral portion of mesonotum black, graying pruinose, dark brown central vitta extending from head to edge of prescutellar depression, a dark brown vitta on each side from center of central vitta to posterior margin of mesono-

tum; prescutellar depression dark brown; three bristles at base of wing, one bristle at posterior lateral angle of mesonotum; scutellum dark brown with many short hairs and four short weak marginal bristles; metanotum black, anterior half gray pruinose. Halteres whitish. Coxæ black, gray pruinose; legs yellow except following parts; a band at apex of each femora, base and apex of each tibia and two-thirds of base of hind femora; fourth tarsal segment cordate; claws simple, about half length of last segment. Wings clear, veins pale, posterior branch of the radius ends at three-fourths the wing length as measured from the arculus, and twice as long as anterior branch; media forking at cross vein; cubitus forking distad of cross vein. Tergites of abdomen light brown, sternites dark brown with the posterior margins nearly black; internally on the anterior margin of seventh tergite is a pair of rod glands twice as long as width of segment and beside each rod is an eversible gland as long as the rod; on the posterior margin is a pair of eversible glands four times as long as width of segment.

Male. Length 1.7 mm. Wing 1.2 mm. Head black; palpi dark brown; antennæ dark brown, two basal segments black, plume lighter, segments 2-9 are 0.63 as long as 10-14 combined; segments 10-14 are in the proportion of 6:7:9:8:11. Thorax black without pruinescence; halteres cream colored. Legs dark brown, black band at apices of fore and mid femora, hind femora black except a light band near apex, black band at base and apex of each tibia with a central band in fore femora, apices of all tarsal joints black. Wings similar to female. Abdomen black.

Terminalia. Basal part of ninth tergite heavily sclerotized, posterior section ending in well developed cerci and a central process, both with a few bristles and covered with short hairs; sternite highly sclerotized, except a posterior medial depression. Side pieces of forceps short and thick, claspers slightly longer than side piece, with blunt tips, both covered with short hairs and a few bristles. Harpes fused into one piece, the basal part broad with short lateral arms extending to side pieces, the distal part forming a thick rod extending to base of claspers and rounded at tip; aedeagus a triangular heavily sclerotized plate (Fig. 10).

Holotype and allotype in Cornell University collection. Reared from larvæ taken from algæ from Ringwood ponds in May, 1933. Ithaca, New York.

This species will find a place in Malloch's key (1915) with *P. opaca* Lw. It differs in being darker, the thorax opaque with three vittæ, and in coloration of the legs.

Probezzia glaber Coquillett

Male. Length 2 mm. Wing 1.5 mm. Head black; palpi brown; antennæ light brown, pedicel dark brown, plume light brown; segments 2-9 are five-sixths of the length of 10-14 combined;

segments 10-14 are in the proportions of 9:11:12:13:19. Thorax dark brown thinly covered with gray pruinescence; the median vittæ less pruinose, but not very sharply differentiated; scutellum golden brown; metanotum black; halteres cream colored. Legs similar to those of the female except that they are brown rather than pale yellow. Wings clear; veins dark; posterior branch of radius ends at seven-tenths the wing length as measured from the arculus, and slightly more than twice as long as the anterior branch. Abdomen black.

Terminalia. Posterior part of tergite of ninth segment ends in two well developed cerci and a membranous central process, both covered with short hairs and several bristles; sternite heavily sclerotized except a narrow medial depression. Side pieces, claspers, and harpes, as in *copiosa*. Aedeagus a thick triangular structure the apex being double hooked (Fig. 17).

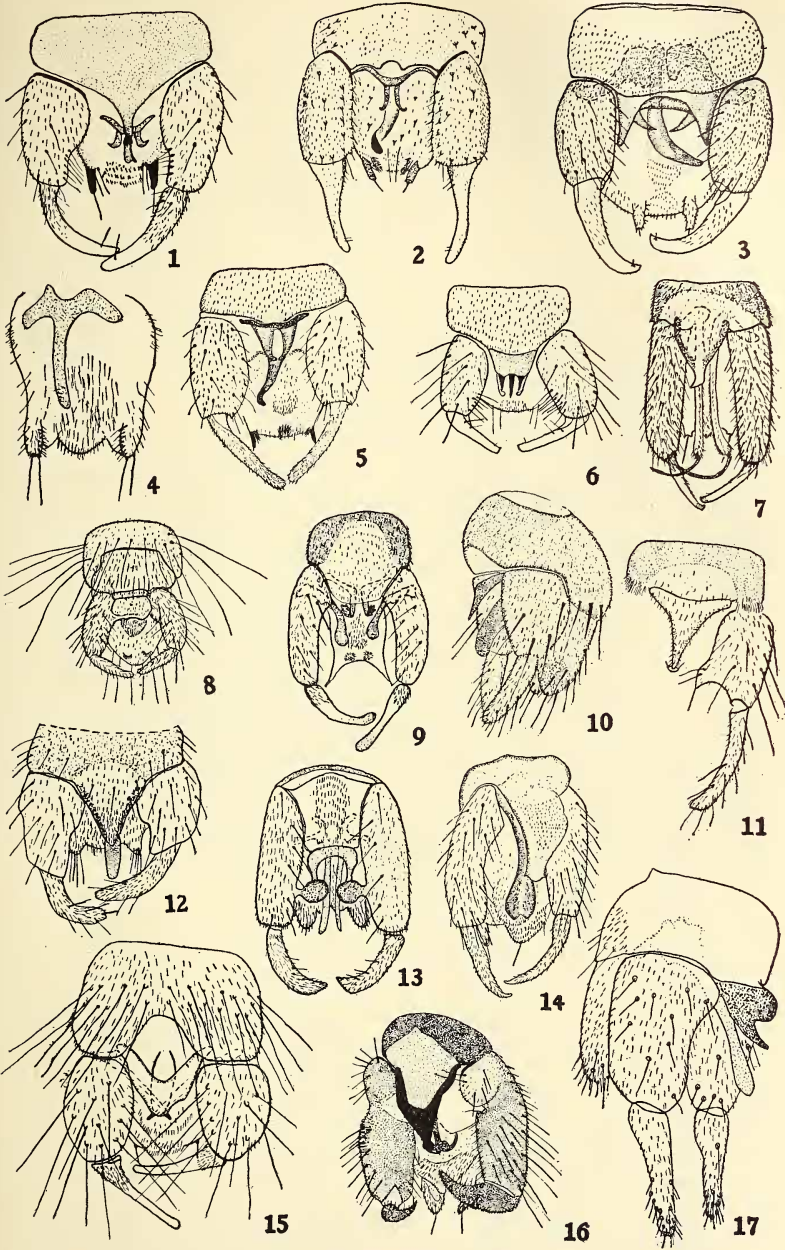
The female of this species was described by Coquillett from a specimen from Florida.

Reared from larvæ taken from floating algæ. Ithaca, New York, 1934.

This sex will find a place in Malloch's key (1915) with the female of *P. opaca* Lw.; differing in being darker. From *P. copiosa* it differs in leg markings.

PLATE XXIII

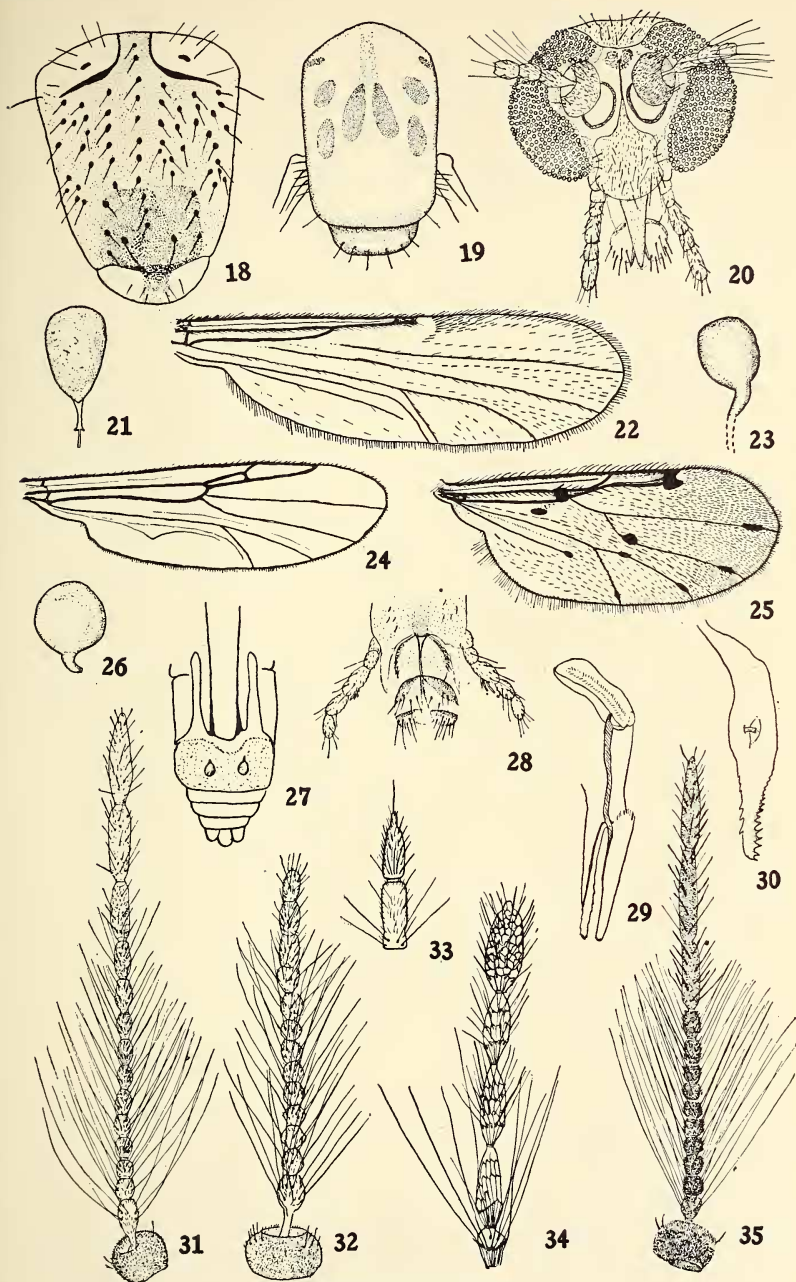
- Figure 1. *Dasyhelea mutabilis* Coquillett. Terminalia. Ventral aspect.
 Figure 2. *Dasyhelea oppressa* n. sp. Terminalia. Ventral aspect.
 Figure 3. *Dasyhelea traveræ* n. sp. Terminalia. Ventral aspect.
 Figure 4. *Palpomyia pruinescens* n. sp. Ninth tergite and harpes.
 Figure 5. *Dasyhelea subcaerulea* n. sp. Terminalia. Ventral aspect.
 Figure 6. *Dasyhelea* sp. ?. Terminalia. Ventral aspect.
 Figure 7. *Alluaudomyia needhami* n. sp. Terminalia. Ventral aspect.
 Figure 8. *Atrichopogon websteri* Coquillett. Terminalia. Ventral aspect.
 Figure 9. *Alluaudomyia splendidus* Winnertz. Terminalia. Ventral aspect.
 Figure 10. *Probezzia copiosa* n. sp. Lateral aspect.
 Figure 11. *Palpomyia pruinescens* n. sp. Ninth sternite, forceps, and aedeagus.
 Figure 12. *Bezzia varicolor* Coquillett. Terminalia. Ventral aspect.
 Figure 13. *Stilobezzia bulla* n. sp. Terminalia. Ventral aspect.
 Figure 14. *Palpomyia longipennis* Loew. Terminalia. Ventral aspect.
 Figure 15. *Forcipomyia johannseni* n. sp. Terminalia. Ventral aspect.
 Figure 16. *Palpomyia tibialis* Meigen. Terminalia. Ventral aspect.
 Figure 17. *Probezzia glaber* Coquillett. Terminalia. Lateral aspect.



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PLATE XXIV

- Figure 18. *Alluaudomyia needhami* n. sp. Mesonotum.
Figure 19. *Palpomyia pruinescens* n. sp. Mesonotum.
Figure 20. *Probezzia copiosa* n. sp. Head of male.
Figure 21. *Dasyhelea traveræ* n. sp. Spermatheca.
Figure 22. *Dasyhelea traveræ* n. sp. Wing of male.
Figure 23. *Dasyhelea oppressa* n. sp. Spermatheca.
Figure 24. *Palpomyia tibialis* Meigen. Wing of female.
Figure 25. *Alluaudomyia needhami* n. sp. Wing of female.
Figure 26. *Dasyhelea mutabilis* Coquillett. Spermatheca.
Figure 27. *Palpomyia pruinescens* n. sp. Glands and rods of female.
Figure 28. *Probezzia copiosa* n. sp. Labium of female.
Figure 29. *Bezzia varicolor* Coquillett. Labrum-epipharynx of female.
Figure 30. *Bezzia varicolor* Coquillett. Mandible of female.
Figure 31. *Bezzia varicolor* Coquillett. Antenna of male.
Figure 32. *Probezzia copiosa* n. sp. Antenna of male.
Figure 33. *Alluaudomyia needhami* n. sp. Apex of male antenna.
Figure 34. *Dasyhelea subcaerulea* n. sp. Apex of male antenna.
Figure 35. *Palpomyia tibialis* Meigen. Antenna of male.



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